

# Fact Sheet



## *For Final Permitting Action Under 45CSR30 and Title V of the Clean Air Act*

Permit Number: R30-06100116-2004  
Plant Identification Number: 061-00116  
Permittee: Northwest Fuel Development, Inc.  
Facility Name: Federal No.2 Mine – Parrish Shaft  
Mailing Address: 4064 Orchard Drive, Lake Oswego, OR 97035

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Physical Location:	Crossroads, Monongalia County, West Virginia
UTM Coordinates:	559.28 (km) Easting • 4389.24 (km) Northing • Zone 17
Directions:	West on Highway 7 from Blacksville, WV to County Road 15. At County Road 15, turn South to Crossroads; from Crossroads go to County Road 13 and turn west. The access road to the facility is approximately ¼ mile along County Road 13, on the right.

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### **Facility Description**

Northwest Fuel Development, Inc. (NFDI) (SIC 1311) operates an electric generation facility. NFDI takes waste methane gas vented from gob wells and vents at Eastern Associated Coal Company's Federal No. 2 Mine to fuel eighteen (18) 454 CID Chevrolet engines each connected directly to a 75 kW, 460 volt, 3-phase electric generator. A small stream of the waste methane gas is of the quality that it can sold to a natural gas company. NFDI has installed a Diethanol Amine (DEA) Unit and a Triethylene glycol (TEG) Unit to condition this gas for sale. The facility has the potential to operate twenty-fours (24) hours a day for seven (7) days per week for fifty-two (52) weeks per year.

## Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Criteria Pollutants	Potential Emissions	2003 Actual Emissions
Carbon Monoxide (CO)	18.10	3.55
Nitrogen Oxides (NO <sub>x</sub> )	249.10	49.60
Particulate Matter (PM <sub>10</sub> )	0.81	0.12
Total Particulate Matter (TSP)	0.8237	0.12
Sulfur Dioxide (SO <sub>2</sub> )	12.242	2.44
Volatile Organic Compounds (VOC)	6.493	1.29
Lead (Pb)	0.00000156	0.00000
<i>PM<sub>10</sub> is a component of TSP.</i>		
Hazardous Air Pollutants	Potential Emissions	2003 Actual Emissions
Acetaldehyde	0.338	0.06724
Acrolein	0.094	0.01875
Benzene	0.265	0.05271
Formaldehyde	2.590	0.51526
Naphthalene	0.008	0.00162
Toluene	0.092	0.01825
Xylene	0.026	0.00515
Diethanol Amine	0.0201	0.00000
<i>Some of the above HAPs may be counted as PM or VOCs.</i>		

## Title V Program Applicability Basis

This facility has the potential to emit over 100 tons per year of Nitrogen Oxide. Due to this facility's potential to emit over 100 tons per year of criteria pollutant NO<sub>x</sub>, Northwest Fuel Development, Inc. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

## Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchanger
	45CSR6	To Prevent and Control Air Pollution from Combustion of Refuse. Open burning prohibited.
	45CSR7	To Prevent and Control Particulate Air Pollution from Manufacturing Process Operations
	45CSR10	To Prevent and Control Air Pollution from the Emissions of Sulfur Dioxides
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation
	45CSR14	Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration
	45CSR20	Good Engineering Practice as Applicable to Stack Heights
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	40 C.F.R. Part 61	Asbestos inspection and removal
State Only:	45CSR4	No objectionable odors.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR15, 45CSR34 and 45CSR30.

#### Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit ( <i>if any</i> )
R13-2148	December 29, 1999	PD02-038; Issued May 2, 2002; To install a Diethanolamine (DEA) Reboiler and a Triethylene Glycol (TEG) Reboiler; permit was not required

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

## Determinations and Justifications

### 45CSR2

Each of the eighteen- (18) waste methane gas engines have a design heat input of 1.4 MMBtu/hr. Since each engine is less than 10 MMBTU/hr, 45CSR§2-11 exempts each fuel-burning unit from the PM weight emissions standards, control of fugitive particulate matter, registration, testing, monitoring, recordkeeping, and reporting, start-up, shutdowns, and malfunctions, 45CSR§2-4, 5, 6, 8, and 9. However, each of the eighteen- (18) engines is subject to the 10% opacity standard of 45CSR§2-3.1. The maximum design heat input (MDHI) for the eighteen- (18) engines is  $25.2 \text{ MMBtu/hr} = 1.4 \text{ MMBtu/hr} \times 18$ .

### 45CSR7

The Northwest Fuel Development facility is required to maintain visible emissions on their process that removes CO<sub>2</sub> from Coal Mine Gas (CMG): Diethanolamine (DEA) Reboiler and a Triethylene Glycol (TEG) Reboiler system. The visible emission from any process source equipment exhaust points should be less than or equal to twenty-percent opacity. Visible emission inspections are required periodically, as required by the state, as a way to ensure ongoing compliance with dust emission limits. The Company will maintain inspection and maintenance records, and have them readily available for the Department upon request. The facility does have the duty to minimize dust generation and atmospheric entrainment from haulroads, and vehicular activity.

The permittee is required to conduct monthly 40 C.F.R. 60, Appendix A, Method 22 visible emissions observations (Method 22 observations) on the DEA and TEG venting system. If during these observations or at any other time, visible emissions occur, a 45CSR7A evaluation must be conducted within one month unless corrective action is taken and recorded. The permittee is required to keep appropriate records of all evaluations, observations, and corrective actions.

Since the Diethanol Amine (DEA) and Triethylene Glycol (TEG) facilities has the potential to emit less than one (1) pound per hour of particulate matter and an aggregate of less than one thousand (1000) pounds per year, according to 45CSR§7-10.5, the Northwest Fuel Development DEA and TEG facilities are exempt from 45CSR§7-4.1.

### 45CSR10

Each of the eighteen (18) 1.4 MMBTU/hr engines is classified as a "Type b" fuel burning unit per 45CSR10 in a Priority III Region. 45CSR§10-3.3.f. sets the maximum allowable SO<sub>2</sub> emissions for "Type b" fuel burning units:

$$\begin{aligned} 45CSR10 \text{ SO}_2 \text{ Allowable:} &= 3.2 * \text{MDHI} \\ \text{MDHI} &= \text{Plantwide Maximum design heat input (MMBTU/hr)} \\ &= 3.2 * (25.2 \text{ MMBTU/hr}) \\ &= 80.64 \text{ lb/hr} \end{aligned}$$

Maximum SO<sub>2</sub> emissions estimates based on the Company's data indicates that total SO<sub>2</sub> emissions from all type 'b' fuel burning units will be 3.63 lb/hr and 12.24 tpy. Thus these units will meet the maximum allowable SO<sub>2</sub> emissions under 45CSR10.

Since the 18 internal combustion engines, DEA reboiler, and TEG reboiler combust natural gas, they are exempt from testing, monitoring, recordkeeping and reporting requirements (45CSR§§10-8), 45CSR10-10.3.

## Non-Applicability Emission Units

The following NFDI emission units:

Three gas blowers that are electric driven used for pumping the waste methane gas. One gas blower is in the electric generating system. Two gas blowers are in the DEA and TEG system.

Two electric compressors are for pumping the waste methane gas in the DEA and TEG system.

One electric driven blower for moving the exhaust gases from the eighteen internal combustion engines to the stack.

One 40 ton Gas Chiller Unit that is used for cooling the feed gas to the Continuous Pressure Swing Absorption Unit (CPSA). The Gas Chiller has three electric motors: two for refrigeration compressors and one for the circulation pump.

One Continuous Pressure Swing Absorption Unit (CPSA) cleans up higher quality coal methane gas stream for pipeline injection. CPSA has one air compressors that is driven by electricity.

## Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

<b>45CSR14</b> (May 1, 1995)	Northwest Fuel Development, Inc. is not subject to 45CSR14 since NFDI reduced their electricity generation to 77% of their maximum capacity to maintain a NOx emissions limit below 250 TPY.
<b>45CSR17</b> (August 31, 2000)	Northwest Fuel Development, Inc. is subject to 45CSR7 which exempts it from 45CSR17, To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter, as stated in 45CSR§7-10.2.
<b>45CSR27</b> (June 30, 2004)	Northwest Fuel Development, Inc. is not subject to 45CSR27 since NFDI equipment that processes natural gas is less than 5% benzene by weight, 45CSR§27-2.4.
<b>45CSR33</b> (July 1, 2000)	Acid Rain Provisions and Permits does not apply to Northwest Fuel Development, Inc. because it is not considered a Title IV (Acid Rain) Source.
<b>40 C.F.R. Part 72</b> (January 11, 1993)	Acid Rain Program General Provisions does not apply to Northwest Fuel Development, Inc because it is not considered a Title IV (Acid Rain) Source.
<b>40 C.F.R. Part 60 Subpart KKK</b> (January 20, 1984)	National Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants. Northwest Fuel Development is not subject to KKK since NFDI does not extract natural gas liquids from the coal methane gas.
<b>40 C.F.R. Part 63 Subpart HH</b> (June 17, 1999)	MACT 40 C.F.R. Part 63 Subpart HH for National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production since Northwest Fuel Development is not a major source for HAP emissions.
<b>40 C.F.R. Part 63 Subpart ZZZZ</b> (February 28, 2004)	MACT 40 C.F.R. Part 63 Subpart ZZZZ for National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (RICE) does not apply to Northwest Fuel Development, Inc., since it produces less than 10 tons per year of a single HAP and less than 25 tons per year of any combination of HAPs. Also, Northwest Fuel Development is not a major source for HAP emissions.

## **Request for Variances or Alternatives**

None

## **Insignificant Activities**

Insignificant emission unit(s) and activities are identified in the Title V application.

## **Comment Period**

Beginning Date: July 14, 2004

Ending Date: August 13, 2004

All written comments should be addressed to the following individual and office:

Wayne Green  
Title V Permit Writer  
West Virginia Department of Environmental Protection  
Division of Air Quality  
7012 MacCorkle Avenue, SE  
Charleston, WV 25304-2943

## **Procedure for Requesting Public Hearing**

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

## **Point of Contact**

Wayne Green  
West Virginia Department of Environmental Protection  
Division of Air Quality  
7012 MacCorkle Avenue, SE  
Charleston, WV 25304-2943  
Phone: 304/926-3727 • Fax: 304/926-3739

## **Response to Comments (Statement of Basis)**

Following are the comments that were received from EPA Region 3 on August 27, 2004.

### **Comment Number 1**

Under Section 4.1.10 the permit shows a maximum allowable emission rate of 80.64 LB/hr for Sulfur dioxide which I believe is 352 tons a year. Attachment A reveals a maximum annual plantwide emissions of 12.24 ton/yr for sulfur dioxide. Please explain why the difference and/or make a correction in the permit.

**Response**

West Virginia rule 45CSR§10-3.3 and 3.3(f) provides the maximum allowable emission rate of sulfur dioxide that can be emitted from the eighteen- (18) internal combustion engines. These internal combustion engines burn natural gas, thus the maximum plantwide emissions of 12.24 ton per year of sulfur dioxide.

R13-2148 (in Attachment A) is more stringent than West Virginia rule 45CSR§10-3.3 and 3.3(f). We did not streamline in Section 4.1.10.

**Comment Number 2**

Under Section 4.1 Limitations and Standards there are no reporting requirements. Please explain or make a correction in the permit.

**Response**

Northwest Fuel Development is exempt from reporting under West Virginia rules, 45CSR2 and 45CSR10. Their internal combustion engines burn natural gas and each unit has heat input less than 10 MMBtu per hour.

Also, Section 4.4.1 describes reporting of permitted operating parameters. We don't believe it is necessary for facilities to report on every thing in the permit. We have in Section 3.5.6, a facility-wide requirement, that the company is to submit a semi-annual report for any required monitoring. Typically, if there is something that we do not want reports for, we will require that those records be kept for 5 years, which is actually a facility-wide standard requirement.

**Comment Number 3**

Under Section 5.1 Limitation and Standard there are no record keeping or reporting requirements for these limitations and standards. Please explain or correct the permit.

**Response**

Northwest Fuel Development is exempt from reporting under West Virginia rule, 45CSR10. Their Diethanol Amine (DEA) and Triethylene Glycol (TEG) facilities burn natural gas and each unit has heat input less than 10 MMBtu per hour.

Sometimes record keeping and reporting requirements are embedded in the monitoring language for convenience, such as, Section 5.2.1.b, for demonstrating compliance with opacity standard. Additionally, facility wide reporting requirements are described in Section 3.5.